**CONSTRUCTION PERMIT**
**OFFICE OF AIR MANAGEMENT**

**Teledyne Casting Service**
**300 Philadelphia Street**
**LaPorte, Indiana 46352**

is hereby authorized to construct

One (1) rotoconditioner, equipped with a baghouse dust collector, exhausted through Stack S04, capacity: 45.0 tons of sand per hour.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

| Construction Permit No.: CP 091-10136-00018 | |
|---|---|
| Issued by:<br><br>Paul Dubenetzky, Branch Chief<br>Office of Air Management | Issuance Date: |

## Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).

2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

   (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

   (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

   (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

   (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).

   (e) The Permittee has submitted their Part 70 (T 091-6141) application on June 17, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

**Operation Conditions**

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).

2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

   (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.

   (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.

   (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

   The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):

   (a) In the event that ownership of this rotoconditioner is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.

   (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.

   (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

   (a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Malfunction Condition

7. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2 (a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Annual Emission Reporting

8. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

9. That pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

10. Particulate Matter (PM) Limitation

In order to avoid the applicability of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the baghouse dust collector, C04, shall be in operation at all times when the rotoconditioner is in operation and

(a) The total PM emission rate after controls for the rotoconditioner, Didion lump crusher and transporters covered in this permit and Source Modification 091-10594 shall be less than 5.48 pounds per hour average over three (3) hours.

(b) The PM emission rate limitation in (a) is less than twenty-five (25) tons per twelve (12) month period, rolled monthly.

11. Particulate Matter (PM) Limitation

Pursuant to 326 IAC 6-3 (Process Operations), the allowable particulate matter (PM) emission rate from the rotoconditioner shall be limited to 43.6 pounds per hour when operating at a process weight rate (P) of 45 tons per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0\ P^{0.11} - 40$$

where E = rate of emission in pounds per hour, and
P = process weight rate in tons per hour.

The baghouse dust collector, C04, shall be in operation at all times the rotoconditioner is in operation, in order to comply with this limit.

12. $PM_{10}$ Limitation

In order to avoid the applicability of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the baghouse dust collector, C04, shall be in operation at all times when the rotoconditioner is in operation and

(a) The total $PM_{10}$ emission rate after controls for the rotoconditioner, Didion lump crusher and transporters covered in this permit and Source Modification 091-10594 shall be less than 3.40 pounds per hour average over three (3) hours.

(b) The $PM_{10}$ emission rate limitation in (a) is less than fifteen (15) tons per twelve (12) month period, rolled monthly.

Baghouse Operating Condition

13. That the baghouse shall be operated at all times when the rotoconditioner is in operation.

(a) The Permittee shall take readings of the total static pressure drop across the baghouse, at least once daily when the rotoconditioner is in operation and vented to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 4.0 and 9.0 inches of water. The Preventive Maintenance Plan for this baghouse shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.

(b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

(c) The gauge employed to take the pressure drop across the baghouse or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within ± 2 percent of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.

(d) An inspection shall be performed each calendar quarter of the baghouse. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.

(e) In the event that a bag's failure has been observed:

(i) The affected compartments will be shut down immediately until the failed units have been replaced.

(ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

14. That visible emission notations of all exhaust to the atmosphere from the baghouse dust collector serving the rotoconditioner shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee will record whether emissions are normal or abnormal.

(a) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.

(b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility’s specific condition prescribing visible emissions.

(c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.

(d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Open Burning

15. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Emergency Reduction Plans

16. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 calendar days from the date on which this source commences operation.

(c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

Performance Testing

17. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests for PM and $PM_{10}$ shall be performed for the baghouse dust collector serving the rotoconditioner within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

(a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.

(b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.

(c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.

(d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.

(e) Whenever the results of the stack test performed exceed the PM and/or $PM_{10}$ limits specified in Operation Conditions 10, 11 and 12, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

**MALFUNCTION REPORT**
**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**
**OFFICE OF AIR MANAGEMENT**
**FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?_____, 100 LBS/HR VOC ?_____, 100 LBS/HR SULFUR DIOXIDE ?_____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?_____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: Teledyne Casting Service PHONE NO. 219 - 362 - 1000

LOCATION: (CITY AND COUNTY) LaPorte / LaPorte

PERMIT NO. CP 091-10136 AFS PLANT ID: 091-00018 AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO2, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

# Indiana Department of Environmental Management
# Office of Air Management

## Technical Support Document (TSD) for New Construction and Operation

**Source Background and Description**

| | |
|---|---|
| **Source Name:** | **Teledyne Casting Service** |
| **Source Location:** | **300 Philadelphia Street, LaPorte, Indiana 46352** |
| **County:** | **LaPorte** |
| **Construction Permit No.:** | **CP 091-10136-00018** |
| **SIC Code:** | **3321** |
| **Permit Reviewer:** | **Frank P. Castelli** |

The Office of Air Management (OAM) has reviewed an application from Teledyne Casting Service relating to the construction and operation of a rotoconditioner, consisting of the following equipment:

One (1) rotoconditioner , equipped with a baghouse dust collector, exhausted through Stack S04, capacity: 40.0 tons of sand per hour.

**Stack Summary**

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature ($^{E}$F) |
|---|---|---|---|---|---|
| S04 | Rotoconditioner | 40.0 | 5.00 | 66,550 | 100 |

**Recommendation**

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on September 11, 1998.

**Emissions Calculations**

See page 1 of 1 of Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

**Total Potential and Allowable Emissions**

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

| Pollutant | Allowable Emissions (tons/yr) | Potential Emissions (tons/yr) |
|---|---|---|
| Particulate Matter (PM) | 186 | 182 |
| Particulate Matter ($PM_{10}$) | 182 | 182 |
| Sulfur Dioxide ($SO_2$) | 0.00 | 0.00 |
| Volatile Organic Compounds (VOC) | 0.00 | 0.00 |
| Carbon Monoxide (CO) | 0.00 | 0.00 |
| Nitrogen Oxides ($NO_X$) | 0.00 | 0.00 |
| Single Hazardous Air Pollutant (HAP) | 0.00 | 0.00 |
| Combination of HAPS | 0.00 | 0.00 |

(a) Allowable PM emissions are determined from the applicability of rule 326 IAC 6-3-2. See attached spreadsheet for detailed calculations.

(b) The potential emissions before control are less than the allowable emissions, therefore, the potential emissions before control are used for the permitting determination.

(c) Allowable emissions (as defined in the Indiana Rule) of particulate matter are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

**County Attainment Status**

(a) Volatile organic compounds (VOC) and oxides of nitrogen ($NO_X$) are precursors for the formation of ozone. Therefore, VOC and $NO_X$ emissions are considered when evaluating the rule applicability relating to the ozone standards. LaPorte County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and $NO_X$ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) LaPorte County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

**Source Status**

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

| Pollutant | Emissions (tons/yr) |
|---|---|
| PM | 85.84 |
| $PM_{10}$ | 100.61 |
| $SO_2$ | 15.7 |
| VOC | 202.4 |
| CO | 525.6 |
| $NO_X$ | 262.8 |

(a) This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

(b) These emissions were based on Facility Quick Look Report, dated March 30, 1998.

**Proposed Modification**

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

| Pollutant | PM (tons/yr) | $PM_{10}$ (tons/yr) | $SO_2$ (tons/yr) | VOC (tons/yr) | CO (tons/yr) | $NO_X$ (tons/yr) |
|---|---|---|---|---|---|---|
| Proposed Modification | 2.08 | 2.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| Contemporaneous Increases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Contemporaneous Decreases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net Emissions | 2.08 | 2.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| PSD Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-091-6141-00018) application on June 17, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

**Federal Rule Applicability**

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.

There are no National Emissions of Hazardous Air Pollutants (NESHAPS) 40 CFR Part 63 applicable to this facility

**State Rule Applicability**

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The allowable $PM_{10}$ emission rate of 3.20 pounds per hour is equivalent to 14.0 tons per year to avoid the applicability of 326 IAC 2-2 for a major modification to a major source.

The allowable PM emission rate of 5.48 pounds per hour is equivalent to 24.0 tons per year to avoid the applicability of 326 IAC 2-2 for a major modification to a major source.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source has the potential to emit more than 100 tons per year of VOC in LaPorte County. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 6-3-2 (Particulate Emission Limitations)

The rotoconditioner shall comply with 326 IAC 6-3-2(c). For process weights in excess of sixty thousand (60,000) pounds per hour, $E = 55.0\ P^{0.11} - 40$. The allowable PM emissions based on the higher process weight rate (P) of 40.0 tons per hour of sand is 42.5 pounds per hour. This allowable PM emission rate has been truncated to be equivalent to a PM emission rate of 24 tons per year to avoid the applicability of 326 IAC 2-2 and is equivalent to 5.48 pounds per hour. Since the maximum controlled PM emission rate is 0.474 pounds per hour, this modification complies with the rule by using the baghouse.

**Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

None of these listed air toxics will be emitted from this proposed construction.

**Conclusion**

The construction of this rotoconditioner will be subject to the conditions of the attached proposed **Construction Permit No. CP 091-10136-00018.**

# Indiana Department of Environmental Management
# Office of Air Management

Addendum to the
Technical Support Document for New Construction and Operation

**Source Name:** **Teledyne Casting Service**
**Source Location:** **300 Philadelphia Street, LaPorte, Indiana 46352**
**County:** **LaPorte**
**Construction Permit No.:** **CP 091-10136-00018**
**SIC Code:** **3321**
**Permit Reviewer:** **Frank P. Castelli**

On October 29, 1998, the Office of Air Management (OAM) had a notice published in the LaPorte Herald-Argus, LaPorte, Indiana, stating that Teledyne Casting Service had applied for a construction permit to construct and operate a rotoconditioner with a baghouse dust collector for particulate matter control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On November 24, 1998, Laurie Ropel, Environmental/Manufacturing Engineer, Teledyne Casting, submitted comments on the proposed construction permit. These comments were received by OAM on December 1, 1998. An addendum to these comments was received on December 2, 1998. Both the addendum and the original comments were received after the end of the 30-day public notice period that ended on November 28, 1998. The comments and corresponding responses are as follows:

**Comment 1:**

Draft Permit, Page 1 and Technical Support Document - Revise description as follows:

One (1) rotoconditioner, equipped with a baghouse dust collector, exhausted through Stack S04, capacity: ~~40.0~~ 45 tons of sand per hour.

Reason for the change: TCS has recently determined that capacities of existing rotoconditioners identical to the proposed rotoconditioner are 45 tons per hour each.

**Response 1:**

This change in capacity from that stated in the permit application for the rotoconditioner results in an increase in the emissions calculations shown in the attached spreadsheet on page 1 of 1 of the TSD Appendix A. (see Response 6). Therefore, the equipment description has been revised as follows:

One (1) rotoconditioner, equipped with a baghouse dust collector, exhausted through Stack S04, capacity: ~~40.0~~ **45.0** tons of sand per hour.

**Comment 2:**

Draft Permit Page 5 - Revise description as follows:

10. Particulate Matter (PM) Limitation
That pursuant to 326 IAC 6-3 (Process Operations) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), ~~rotoconditioner~~ the baghouse dust collector serving the rotoconditioner shall be in operation at all times when the rotoconditioner is in operation, and shall not exceed a particulate matter (PM) emission rate of 5.48 pounds per hour, equivalent to 24.0 tons per year. This PM emission rate will make 326 IAC 2-2 not applicable and will also satisfy the requirements of 326 IAC 6-3.

**Response 2:**

Operation Condition No. 10 has been revised to indicate that the baghouse controlling the rotoconditioner is not a dedicated "rotoconditioner baghouse". Operation Condition Nos. 10 and 11 (now Condition No.12) have been revised to address the applicability of 326 IAC 2-2 to PM in Condition 10 and $PM_{10}$ in Condition 12 from the equipment covered by this permit as well as the equipment covered by proposed Source Modification 091-10594. Condition No. 11 has been added to separately address the allowable PM emission rate pursuant to 326 IAC 6-3. The conditions are as follows:

10. Particulate Matter (PM) Limitation
~~That pursuant to 326 IAC 6-3 (Process Operations) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), shall be in operation at all times when the rotoconditioner is in operation, and shall not exceed a particulate matter (PM) emission rate of 5.48 pounds per hour, equivalent to 24.0 tons per year. This PM emission rate will make 326 IAC 2-2 not applicable and will also satisfy the requirements of 326 IAC 6-3.~~

**In order to avoid the applicability of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the baghouse dust collector, C04, shall be in operation at all times when the rotoconditioner is in operation and**

**(a) The total PM emission rate after controls for the rotoconditioner, Didion lump crusher and transporters covered in this permit and Source Modification 091-10594 shall be less than 5.48 pounds per hour average over three (3) hours.**

**(b) The PM emission rate limitation in (a) is less than twenty-five (25) tons per twelve (12) month period, rolled monthly.**

**11. Particulate Matter (PM) Limitation**
**Pursuant to 326 IAC 6-3 (Process Operations), the allowable particulate matter (PM) emission rate from the rotoconditioner shall be limited to 43.6 pounds per hour when operating at a process weight rate (P) of 45 tons per hour.**

**The pounds per hour limitation was calculated with the following equation:**

**Interpolation and extrapolation of the data for the process weight rate in excess of sixty**

**thousand (60,000) pounds per hour shall be accomplished by use of the equation:**

$$E = 55.0\ P^{0.11} - 40$$

**where E = rate of emission in pounds per hour, and**
**P = process weight rate in tons per hour.**

**The baghouse dust collector, C04, shall be in operation at all times the rotoconditioner is in operation, in order to comply with this limit.**

~~11~~ **12**. $PM_{10}$ Limitation

~~The $PM_{10}$ emission rate shall not exceed the 3.20 pounds per hour, equivalent to 14.0 tons per year. This $PM_{10}$ emission rate makes 326 IAC 2-2 not applicable.~~

**In order to avoid the applicability of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the baghouse dust collector, C04, shall be in operation at all times when the rotoconditioner is in operation and**

**(a) The total $PM_{10}$ emission rate after controls for the rotoconditioner, Didion lump crusher and transporters covered in this permit and Source Modification 091-10594 shall be less than 3.40 pounds per hour average over three (3) hours**.

**(b) The $PM_{10}$ emission rate limitation~~s~~ in (a) is less than fifteen (15) tons per twelve (12) month period, rolled monthly.**

**Comment 3:**

Baghouse Operating Condition

12. That the baghouse shall be operated at all times when the rotoconditioner is in operation.

(a) The permittee shall take readings of the total static pressure drop across the baghouse, at least once daily when the rotoconditioner is in operation an vented to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 4.0 and ~~8.0~~ 9.0 inches of water. The Preventive Maintenance Plan for this baghouse shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.

Reason for revision: The rotoconditioner would be attached to an existing dust collector, which typically operates with a pressure drop between 4.0 and 9.0 inches of water.

(d) An inspection shall be performed ~~each calendar quarter~~ annually of all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.

Reason for the change: The average life of Teledyne Casting Service's dust collector bags is approximately two years. Also, broken bags would be detected during the daily visible emission notation. Thus, quarterly bag inspections of each bag or quarterly leak tests would be excessive and would not provide any additional information.

(e) In the event that a bag's failure has been observed:

(i) If the failure results in a visible emissions violation, ~~The~~ the affected compartments will be shut down immediately until the failed units have been replaced.

(ii) Based upon the findings of the inspection, ~~any additional corrective~~ Corrective actions will be devised within ~~eight (8)~~ twenty-four (24) hours of discovery and will include a timetable for completion.

Reason for the change: A bag failure would not result in an exceedence of an existing permit condition or regulation due to a particulate emissions increase unless a visible emissions limitation is exceeded.

**Response 3:**

Part (a) of Operating Condition No. 12 (now Condition No. 13) has been revised as follows:

(a) The Permittee shall take readings of the total static pressure drop across the baghouse, at least once daily when the rotoconditioner is in operation and vented to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 4.0 and ~~8.0~~ **9.0** inches of water. The Preventive Maintenance Plan for this baghouse shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.

Parts (d) and (e) of Operation Condition No. 12 (now Condition No. 13) are required to minimize excess emissions to the extent feasible caused by events such, as a bag failure. The OAM does not believe that annual inspections are sufficient to insure proper operation of the baghouse. The OAM does not consider shutting down the baghouse and associated production equipment to be infeasible in this case.

Once a bag failure is observed, continuing to operate the equipment and venting uncontrolled particulate matter to the atmosphere, visible or not, may not be considered an attempt by the Permittee to take all reasonable steps to minimize levels of emissions that exceed an emission standard or other requirement in the permit. The eight (8) hour time frame to devise additional corrective actions is also not unreasonable. Therefore, parts (d) and (e) of Operation Condition 12 (now Condition No. 13) have not been revised.

**Comment 4:**

Draft Permit Page 6 - Revise condition as follows:

Visible Emissions Notations

13. That visible emission notations of all exhaust to the atmosphere from the ~~rotoconditioner~~ baghouse dust collector serving the rotoconditioner shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee will record whether emissions are normal or abnormal.

**Response 4:**

Condition No. 13 (now Condition No. 14) has been revised as suggested as shown below:

Visible Emission Notations

~~13.~~**14** That visible emission notations of all exhaust to the atmosphere from the ~~rotoconditioner~~ baghouse dust collector **serving the rotoconditioner** shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee will record whether emissions are normal or abnormal.

**Comment 5:**

Technical Support Document Page 2 - Revise as follows:

**Total Potential and Allowable Emissions**

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

| Pollutant | Allowable Emissions (tons/yr) | Potential Emissions (tons/yr) |
|---|---|---|
| Particulate Matter (PM) | ~~186~~ 190 | ~~182~~ 205 |
| Particulate Matter ($PM_{10}$) | ~~182~~ 190 | ~~182~~ 205 |
| Sulfur Dioxide ($SO_2$) | 0.00 | 0.00 |
| Volatile Organic Compounds (VOC) | 0.00 | 0.00 |
| Carbon Monoxide (CO) | 0.00 | 0.00 |
| Nitrogen Oxides ($NO_X$) | 0.00 | 0.00 |
| Single Hazardous Air Pollutant (HAP) | 0.00 | 0.00 |
| Combination of HAPs | 0.00 | 0.00 |

Allowable PM emissions are determined from the applicability of rule 326 IAC 6-3-2. See attached spreadsheet for detailed calculations.

The potential emissions before control are ~~less~~ more than the allowable emissions~~, therefore, the~~ The potential emissions before control are used for the permitting determination.

(c) Allowable emissions (as defined in the Indiana Rule) of particulate matter are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

Reason for change: Allowable and potential emissions were revised according to the rotoconditioner's change in throughput capacity from 40 tons sand per hour to 45 tons sand per hour

**Response 5:**

The potential and allowable emissions have been revised due to the change in the capacity of the rotoconditioner. The revised potential and allowable emissions are as follows:

| **Pollutant** | **Allowable Emissions** (tons/yr) | **Potential Emissions** (tons/yr) |
|---|---|---|
| Particulate Matter (PM) | **190** ~~186~~ | **205** ~~182~~ |
| Particulate Matter ($PM_{10}$) | **205** ~~182~~ | **205** ~~182~~ |
| Sulfur Dioxide ($SO_2$) | 0.00 | 0.00 |
| Volatile Organic Compounds (VOC) | 0.00 | 0.00 |
| Carbon Monoxide (CO) | 0.00 | 0.00 |
| Nitrogen Oxides ($NO_X$) | 0.00 | 0.00 |
| Hazardous Air Pollutant (HAP) | 0.00 | 0.00 |

(a) Allowable PM emissions are determined from the applicability of rule 326 IAC 6-3-2. See attached spreadsheet for detailed calculations.

(b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.

(c) Allowable emissions (as defined in the Indiana Rule) of particulate matter are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

The potential emissions after controls from the proposed modification on page 3 of 4 has been updated as follows:

**Proposed Modification**

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

| Pollutant | PM (tons/yr) | $PM_{10}$ (tons/yr) | $SO_2$ (tons/yr) | VOC (tons/yr) | CO (tons/yr) | $NO_X$ (tons/yr) |
|---|---|---|---|---|---|---|
| Proposed Modification | **2.34** ~~2.08~~ | **2.34** ~~2.08~~ | 0.00 | 0.00 | 0.00 | 0.00 |
| Contemp. Increases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Contemp. Decreases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net Emissions | **2.34** ~~2.08~~ | **2.34** ~~2.08~~ | 0.00 | 0.00 | 0.00 | 0.00 |
| PSD Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

**Comment 6:**

County Attainment Status

(b) LaPorte County has been classified as attainment or unclassifiable for PM, $PM_{10,}$ and $NO_X$. LaPorte County is classified as maintenance status for $SO_2$ ~~all remaining criteria pollutants~~. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

**Response 6:**

The attainment status is listed as either attainment or nonattainment and since maintenance is considered attainment, no change is required.

**Comment 7:**

Technical Support Document Page 3

**Source Status**

| Pollutant | Emissions (tons/yr) |
|---|---|
| PM | ~~85.84~~ 172.64 |
| $PM_{10}$ | ~~100.61~~ 100.07 |
| $SO_2$ | ~~15.7~~ 1.38 |
| VOC | ~~202.4~~ 265.40 |
| CO | ~~525.6~~ 2.18 |
| $NO_X$ | ~~262.8~~ 8.36 |

(a) The existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

(b) These emissions were based on ~~Facility Quick Look Report, dated March 30, 1998~~ the 1997 Air Emission Statement submitted to IDEM, OAM, July 1998.

**Response 7:**

Thank you providing an update of the actual emissions, however, this table in the TSD reflects the existing permitted PSD definition emissions (not actual emissions) and therefore should not be revised.

**Comment 8:**

Technical Support Document Page 4 - Revise as follows:

**State Rule Applicability**

326 IAC 6-3-2 (Particulate Emission Limitations)

The rotoconditioner shall comply with 326 IAC 6-3-2 (c). For process weights in excess of sixty thousand (60,000) pounds per hour, $E = 55.0P^{0.11} - 40$. The allowable PM emissions based on the higher process weight rate (P) of ~~40.0~~ 45 tons per hour of sand is ~~42.5~~ 43.6 pounds per hour. Since the maximum controlled PM emission rate is ~~0.474~~ 0.534 pounds per hour, this modification complies with the rule by using the baghouse.

Reason for the change: Allowable and maximum controlled emissions were revised to include the rotoconditioner's change in throughput capacity from 40 tons sand per hour to 45 tons sand per hour.

**Response 8:**

All revisions required in the permit due to the change in the capacity of the rotoconditioner have been addressed in Responses 2 and 3.

Upon further review, the OAM has decided to make the following changes to the Construction Permit. The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded)**:

1. Condition 9 has been updated to reflect the revision in 326 IAC 5-1-2 dated November 1, 1998. as follows:

Opacity [326 IAC 5-1]

9. That pursuant to 326 IAC 5-1-2 (~~Visible Emissions~~ **Opacity** Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), ~~visible emissions~~ opacity shall meet the following, unless otherwise stated in this permit:

   (a) ~~Visible emissions~~ **Opacity** shall not exceed an average of forty percent (40%) ~~opacity~~ in ~~twenty four (24) consecutive readings~~, any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

   (b) ~~Visible emissions~~ **Opacity** shall not exceed sixty percent (60%) ~~opacity~~ for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) **as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor** in a six (6) hour period.

2. Condition No. 17 has been added to the permit to require stack testing of the baghouse outlet to insure that the particulate matter and $PM_{10}$ emissions do not exceed the PM and $PM_{10}$ limits specified in Conditions 10, 11 and 12 of the permit as follows:

**Performance Testing**

**17. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests for PM and $PM_{10}$ shall be performed for the baghouse dust collector serving the rotoconditioner within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.**

**(a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.**

**(b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.**

**(c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.**

**(d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.**

**(e) Whenever the results of the stack test performed exceed the PM and/or $PM_{10}$ limits specified in Operation Conditions 10, 11 and 12, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.**

# Potential Emissions Calculations

**Company Name:** Teledyne Casting Service
**Address City IN Zip:** 300 Philadelphia Street, LaPorte, Indiana 46350
**CP:** 091-10136
**Plt ID:** 091-00018
**Reviewer:** Frank P. Castelli
**Date:** September 11, 1998

**Emission Unit** **Rotoconditioner (Stack S04)**

| Pollutant | Maximum Rate (tons/hr) | Emission Factor (lbs/tons) | Uncontrolled Emission Rate (lbs/hr) | Uncontrolled Emission Rate (tons/year) | Overall Control Efficiency (%) | Controlled Emission Rate (lbs/hr) | Controlled Emission Rate (tons/year) | Allowable Emission Rate (lbs/hr) | Limited Allowable Emission Rate (lbs/hr) |
|---|---|---|---|---|---|---|---|---|---|
| PM | 40.0 | 1.04 | 41.6 | 182 | 98.86% | 0.474 | 2.08 | 42.5 | 5.48 |
| PM10 | 40.0 | 1.04 | 41.6 | 182 | 98.86% | 0.474 | 2.08 | | 3.20 |

Allowable PM emission are pursuant to 326 IAC 6-3-2 calculated by ther equation PM = 55.0*P^^0.11 - 40
Limited PM and PM-10 emission rates are equivalent to 24.0 and 14.0 tons per year, respectively to avoid applicability of 326 IAC 2-2 (PSD)

Emission factors from stack tests by Hoosier Environmental Services in pounds per ton of sand processed.
Stack test conducted Dec. 1991 and total mechanical reclamation emission factor approved by IDEM during Title V application review.
Note: No HAPs